

WHAT IS CLAIMED IS:

1 1. A personal authentication system using biometrics
2 information, which identifies or authenticates an individual
3 using biometrics information, comprising:

4 a biometrics information inputting section having a
5 function to acquire biometrics information;

6 a biometrics information converting section for
7 converting said biometrics information, acquired through said
8 biometrics information inputting section, into a state to be
9 acquired on a predetermined acquisition condition; and

10 a biometrics characteristic data extracting section for
11 extracting biometrics characteristic data from the biometrics
12 information obtained by the conversion in said biometrics
13 information converting section.

1 2. A personal authentication system using biometrics
2 information according to claim 1, wherein said biometrics
3 information inputting section is of a type acquiring said
4 biometrics information as image data, and said biometrics
5 information converting section converts said biometrics
6 information, acquired through said biometrics information
7 inputting section, into image data with a predetermined
8 resolution included in said predetermined acquisition
9 condition.

1 3. A personal authentication system using biometrics

2 information according to claim 1, wherein said biometrics
3 information inputting section is of a type acquiring said
4 biometrics information as image data, and said biometrics
5 information converting section converts said biometrics
6 information, acquired through said biometrics information
7 inputting section, into image data with a predetermined
8 resolution and predetermined numbers of pixels in vertical and
9 horizontal directions, included in said predetermined
10 acquisition condition.

1 4. A personal authentication system using biometrics
2 information according to claim 1, wherein said biometrics
3 information inputting section is of a type acquiring said
4 biometrics information as image data, and said biometrics
5 information converting section converts said biometrics
6 information, acquired through said biometrics information
7 inputting section, into image data with a predetermined image
8 characteristic included in said predetermined acquisition
9 condition.

1 5. A personal authentication system using biometrics
2 information according to claim 1, wherein said biometrics
3 information inputting section is of a type acquiring said
4 biometrics information as time series data, and said biometrics
5 information converting section converts said biometrics
6 information, acquired through said biometrics information
7 inputting section, into time series data with a predetermined

8 sampling period included in said predetermined acquisition
9 condition.

1 6. A personal authentication system using biometrics
2 information according to claim 1, wherein said biometrics
3 information inputting section is of a type acquiring
4 fingerprint information as said biometrics information in the
5 form of image data, and said biometrics information converting
6 section converts said fingerprint information, acquired
7 through said biometrics information inputting section, into
8 image data with a predetermined relationship in brightness
9 between ridge lines and trough lines, included in said
10 predetermined acquisition condition.

1 7. A personal authentication system using biometrics
2 information according to claim 6, wherein a brightness
3 relationship judging section is provided to judge a
4 relationship in brightness between ridge lines and trough lines
5 in said fingerprint information acquired through said
6 biometrics information inputting section, and said biometrics
7 information converting section conducts conversion processing
8 of image data in accordance with the judgment of the brightness
9 relationship judging section.

1 8. A personal authentication system using biometrics
2 information, which identifies or authenticates an individual
3 using biometrics information, comprising:

4 a biometrics information inputting section having a
5 function to acquire biometrics information;

6 a biometrics characteristic data extracting section for
7 extracting biometrics characteristic data from the biometrics
8 information acquired through said biometrics information
9 inputting section;

10 an acquisition condition attaching section for
11 attaching, to said biometrics information to be inputted from
12 said biometrics information inputting section to said
13 biometrics characteristic data extracting section, an
14 acquisition condition related to said biometrics information;
15 and

16 a biometrics information converting section for, before
17 the extraction of said biometrics characteristic data from said
18 biometrics information in said biometrics characteristic data
19 extracting section, converting said biometrics information
20 into a state to be acquired on a predetermined acquisition
21 condition, in accordance with said acquisition condition
22 attached to said biometrics information.

1 9. A personal authentication system using biometrics
2 information according to claim 8, wherein said biometrics
3 information inputting section is of a type acquiring said
4 biometrics information as image data, and said acquisition
5 condition attaching section attaches a resolution as said
6 acquisition condition to said biometrics information, and said
7 biometrics information converting section converts said

8 biometrics information into image data with a predetermined
9 resolution on the basis of said resolution attached to said
10 biometrics information.

1 10. A personal authentication system using biometrics
2 information according to claim 8, wherein said biometrics
3 information inputting section is of a type acquiring said
4 biometrics information as image data, and said acquisition
5 condition attaching section attaches a resolution and the
6 numbers of pixels in vertical and horizontal directions, as
7 said acquisition condition, to said biometrics information,
8 and said biometrics information converting section converts
9 said biometrics information into image data with a
10 predetermined resolution and predetermined numbers of pixels
11 in vertical and horizontal directions, on the basis of the
12 resolution and the numbers of pixels in vertical and horizontal
13 directions attached to said biometrics information.

1 11. A personal authentication system using biometrics
2 information according to claim 8, wherein said biometrics
3 information inputting section is of a type acquiring said
4 biometrics information as time series data, and said
5 acquisition condition attaching section attaches a sampling
6 period as said acquisition condition to said biometrics
7 information, and said biometrics information converting
8 section converts said biometrics information into time series
9 data with a predetermined sampling period, on the basis of said

10 sampling period attached to said biometrics information.

1 12. A personal authentication system using biometrics
2 information according to claim 8, wherein said biometrics
3 information inputting section is of a type acquiring
4 fingerprint information as said biometrics information in the
5 form of image data, and said acquisition condition attaching
6 section attaches, to said fingerprint information as said
7 acquisition condition, a relationship in brightness between
8 ridge lines and trough lines in said fingerprint information,
9 and said biometrics information converting section converts
10 said fingerprint information into image data with a
11 predetermined brightness relationship, on the basis of said
12 brightness relationship attached to said fingerprint
13 information.

1 13. A personal authentication system using biometrics
2 information, which identifies or authenticates an individual
3 using biometrics information, comprising:

4 a biometrics information inputting section having a
5 function to acquire biometrics information;

6 a biometrics characteristic data extracting section for
7 extracting biometrics characteristic data from said
8 biometrics information acquired through said biometrics
9 information inputting section;

10 a biometrics characteristic data registering section
11 for previously preserving registration biometrics

12 characteristic data extracted from biometrics information;
13 a biometrics characteristic data verifying section for
14 verifying that verification biometrics characteristic data on
15 a person forming a subject of verification, obtained through
16 said biometrics information inputting section and said
17 biometrics characteristic data extracting section, matches
18 said registration biometrics characteristic data on the same
19 verification person registered and preserved previously in
20 said biometrics characteristic data registering section;

21 an acquisition condition attaching section for
22 attaching, to biometrics characteristic data to be inputted
23 from said biometrics characteristic data extracting section
24 to said biometrics characteristic data registering section or
25 said biometrics characteristic data verifying section, an
26 acquisition condition related to the biometrics information
27 being an extraction source of said biometrics characteristic
28 data; and

29 a biometrics characteristic data converting section for,
30 before the verifying that said verification biometrics
31 characteristic data matches said registration biometrics
32 characteristic data in said biometrics characteristic data
33 verifying section, converting at least one of said verification
34 biometrics characteristic data and said registration
35 biometrics characteristic data in accordance with said
36 acquisition condition attached to said verification
37 biometrics characteristic data and said registration
38 biometrics characteristic data to convert said verification

39 biometrics characteristic data and said registration
40 biometrics characteristic data into data to be obtained on the
41 same acquisition condition.

1 14. A personal authentication system using biometrics
2 information, which identifies or authenticates an individual
3 using biometrics information, comprising:

4 a biometrics information inputting section having a
5 function to acquire biometrics information;

6 a biometrics characteristic data extracting section for
7 extracting biometrics characteristic data from said
8 biometrics information acquired through said biometrics
9 information inputting section;

10 a biometrics characteristic data registering section
11 for previously preserving registration biometrics
12 characteristic data extracted from biometrics information;

13 a biometrics characteristic data verifying section for
14 verifying that verification biometrics characteristic data on
15 a person forming a subject of verification, obtained through
16 said biometrics information inputting section and said
17 biometrics characteristic data extracting section, matches
18 said registration biometrics characteristic data on the same
19 verification person registered and preserved previously in
20 said biometrics characteristic data registering section;

21 a verification mode version attaching section for
22 attaching, to biometrics characteristic data to be inputted
23 from said biometrics characteristic data extracting section

24 to said biometrics characteristic data registering section or
25 said biometrics characteristic data verifying section, a
26 version of verification mode related to said biometrics
27 characteristic data; and

28 a biometrics characteristic data converting section for,
29 before verifying that said verification biometrics
30 characteristic data matches said registration biometrics
31 characteristic data in said biometrics characteristic data
32 verifying section, converting at least one of said verification
33 biometrics characteristic data and said registration
34 biometrics characteristic data on the basis of said
35 verification mode version attached to said verification
36 biometrics characteristic data and said registration
37 characteristic data to convert said verification biometrics
38 characteristic data and said registration biometrics
39 characteristic data into data corresponding to the same
40 verification mode version.

1 15. A personal authentication system using biometrics
2 information, which identifies or authenticates an individual
3 using biometrics information, comprising:

4 a biometrics information inputting section having a
5 function to acquire biometrics information;

6 a biometrics characteristic data extracting section for
7 extracting biometrics characteristic data from said
8 biometrics information acquired through said biometrics
9 information inputting section;

10 a biometrics characteristic data registering section
11 for previously preserving registration biometrics
12 characteristic data extracted from biometrics information;
13 a biometrics characteristic data verifying section for
14 verifying that verification biometrics characteristic data on
15 a person forming a subject of verification, obtained through
16 said biometrics information inputting section and said
17 biometrics characteristic data extracting section, matches
18 said registration biometrics characteristic data on the same
19 verification person registered and preserved previously in
20 said biometrics characteristic data registering section; and
21 a biometrics characteristic data converting section for,
22 when a change of verification mode in said biometrics
23 characteristic data verifying section takes place, converting
24 collectively all registration biometrics characteristic data,
25 registered in said biometrics characteristic data registering
26 section, into biometrics characteristic data corresponding to
27 the verification mode after the change.

1 16. A personal authentication system using biometrics
2 information, which identifies or authenticates an individual
3 using biometrics information, comprising:

4 a biometrics information inputting section having a
5 function to acquire biometrics information;

6 a biometrics characteristic data extracting section for
7 extracting biometrics characteristic data from said
8 biometrics information acquired through said biometrics

9 information inputting section;

10 a biometrics characteristic data registering section

11 for previously preserving auxiliary biometrics characteristic

12 data besides biometrics characteristic data essential to the

13 identification and authentication as registration biometrics

14 characteristic data extracted from biometrics information;

15 and

16 a biometrics characteristic data restructuring section

17 for, when a change of kind of said biometrics characteristic

18 data to be used for the identification and authentication takes

19 place, restructuring new registration biometrics

20 characteristic data according to the change through the use

21 of the essential biometrics characteristic data and said

22 auxiliary biometrics characteristic data.

1 17. A personal authentication system using biometrics

2 information, which identifies or authenticates an individual

3 using biometrics information, comprising:

4 a biometrics information inputting section having a

5 function to acquire biometrics information;

6 a biometrics characteristic data extracting section for

7 extracting biometrics characteristic data from said

8 biometrics information acquired through said biometrics

9 information inputting section;

10 a biometrics characteristic data registering section

11 for previously preserving registration biometrics

12 characteristic data extracted from said biometrics

13 information and said biometrics information being an
14 extraction source of said registration biometrics
15 characteristic data; and

16 a biometrics characteristic data restructuring section
17 for, when a change of kind of the biometrics characteristic
18 data to be used for the identification and authentication takes
19 place, extracting and restructuring new registration
20 biometrics characteristic data from said biometrics
21 information being the extraction source of said registration
22 biometrics characteristic data according to the change.

1 18. A personal authentication system using biometrics
2 information according to claim 16, further comprising:

3 a biometrics characteristic data verifying section made
4 to handle a plurality of verification modes, for verifying that
5 verification biometrics characteristic data on a person
6 forming a subject of verification, obtained through said
7 biometrics information inputting section and said biometrics
8 characteristic data extracting section, matches registration
9 biometrics characteristic data on the same subject person,
10 previously registered and preserved in said biometrics
11 characteristic data registering section; and

12 a verification mode version attaching section for
13 attaching, to biometrics characteristic data to be inputted
14 from said biometrics characteristic data extracting section
15 to said biometrics characteristic data registering section or
16 said biometrics characteristic data verifying section, a

17 verification mode version related to said biometrics
18 characteristic data,
19 when verification mode versions respectively attached
20 to said verification biometrics characteristic data and the
21 registration biometrics characteristic data between which
22 verification is made in said biometrics characteristic data
23 verifying section does not agree with each other, said
24 biometrics characteristic data restructuring section
25 restructuring one of said verification biometrics
26 characteristic data and said registration biometrics
27 characteristic data into biometrics characteristic data
28 needed for a verification mode corresponding to the
29 verification mode version for the other biometrics
30 characteristic data.

1 19. A personal authentication system using biometrics
2 information according to claim 17, further comprising:
3 a biometrics characteristic data verifying section made
4 to handle a plurality of verifying modes, for verifying that
5 verification biometrics characteristic data on a person
6 forming a subject of verification, obtained through said
7 biometrics information inputting section and said biometrics
8 characteristic data extracting section, matches registration
9 biometrics characteristic data on the same subject person,
10 previously registered and preserved in said biometrics
11 characteristic data registering section; and
12 a verification mode version attaching section for

13 attaching, to biometrics characteristic data to be inputted
14 from said biometrics characteristic data extracting section
15 to said biometrics characteristic data registering section or
16 said biometrics characteristic data verifying section, a
17 verification mode version related to said biometrics
18 characteristic data,

19 when verification mode versions respectively attached
20 to said verification biometrics characteristic data and the
21 registration biometrics characteristic data between which
22 verification is made in said biometrics characteristic data
23 verifying section does not agree with each other, said
24 biometrics characteristic data restructuring section
25 restructuring one of said verification biometrics
26 characteristic data and said registration biometrics
27 characteristic data into biometrics characteristic data
28 needed for a verification mode corresponding to the
29 verification mode version for the other biometrics
30 characteristic data.

1 20. A personal authentication system using biometrics
2 information, which identifies or authenticates an individual
3 using biometrics information, comprising:

4 a verification mode version attaching section for
5 attaching a verification mode version to biometrics
6 characteristic data extracted from said biometrics
7 information; and

8 a biometrics characteristic data verifying section for

9 performing verification processing using said biometrics
10 characteristic data in a verification mode corresponding to
11 said verification mode version attached to said biometrics
12 characteristic data.

1 21. A personal authentication system using biometrics
2 information, which identifies or authenticates an individual
3 using biometrics information, comprising:

4 a biometrics information inputting section having a
5 function to acquire biometrics information;

6 a biometrics characteristic data extracting section for
7 extracting biometrics characteristic data, to be needed in a
8 plurality of verification modes, from biometrics information
9 acquired through said biometrics information inputting
10 section;

11 a biometrics characteristic data registering section
12 for previously preserving registration biometrics
13 characteristic data extracted from biometrics information;

14 a biometrics characteristic data verifying section made
15 to handle a plurality of verification modes, for verifying that
16 verification biometrics characteristic data on a person
17 forming a subject of verification, obtained through said
18 biometrics information inputting section and said biometrics
19 characteristic data extracting section, matches registration
20 biometrics characteristic data on the same subject person,
21 previously preserved in said biometrics characteristic data
22 registering section; and

23 a verification mode version attaching section for
24 attaching, to registration biometrics characteristic data to
25 be inputted from said biometrics characteristic data
26 extracting section to said biometrics characteristic data
27 registering section, a verification mode version related to
28 said registration biometrics characteristic data,

29 wherein said biometrics characteristic data extracting
30 section extracts, as said verification biometrics
31 characteristic data, biometrics characteristic data to be
32 needed in a verification mode corresponding to the verification
33 mode version attached to said registration biometrics
34 characteristic data, from the biometrics information acquired
35 through said biometrics information inputting section.

1 22. A personal authentication system using biometrics
2 information according to claim 21, wherein said biometrics
3 characteristic data verifying section verifies that said
4 registration biometrics characteristic data matches said
5 verification biometrics characteristic data extracted by said
6 biometrics characteristic data extracting section, and when
7 a verification result of said biometrics characteristic data
8 verifying section shows a matching rate equal to or larger than
9 a predetermined value and said verification mode version is
10 older than a predetermined version, said biometrics
11 characteristic data extracting section extracts biometrics
12 characteristic data for the latest verification mode from said
13 biometrics information so that the extracted biometrics

14 characteristic data is re-registered as new registration
15 biometrics characteristic data in said biometrics
16 characteristic data registering section.

1 23. A personal authentication system using biometrics
2 information, which identifies or authenticates an individual
3 using biometrics information, comprising:

4 a biometrics information inputting section having a
5 function to acquire biometrics information;

6 a biometrics characteristic data extracting section for
7 extracting biometrics characteristic data from biometrics
8 information acquired through said biometrics information
9 inputting section;

10 a biometrics characteristic data registering section
11 for previously preserving registration biometrics
12 characteristic data extracted from biometrics information,

13 a biometrics characteristic data verifying section made
14 to handle a plurality of verification modes, for verifying that
15 verification biometrics characteristic data on a person
16 forming a subject of verification, obtained through said
17 biometrics information inputting section and said biometrics
18 characteristic data extracting section, matches registration
19 biometrics characteristic data on the same subject person,
20 previously registered and preserved in said biometrics
21 characteristic data registering section; and

22 a verification mode version attaching section for
23 attaching, to biometrics characteristic data to be inputted

24 from said biometrics characteristic data extracting section
25 to said biometrics characteristic data registering section and
26 said biometrics characteristic data verifying section, a
27 verification mode version related to said biometrics
28 characteristic data,

29 wherein said biometrics characteristic data extracting
30 section extracts separately dependence data depending on a
31 verification mode and common data to be used in common among
32 all verification modes without depending on a verification
33 mode,

34 while, when the verification mode version attached to
35 said verification biometrics characteristic data does not
36 match the verification mode version attached to said
37 registration biometrics characteristic data, said biometrics
38 characteristic data verifying section conducts the
39 verification using said common data in said verification
40 biometrics characteristic data and said registration
41 biometrics characteristic data.

1 24. A client-server type personal authentication system in
2 which a client side extracts verification biometrics
3 characteristic data from biometrics information on an
4 individual while a server side performs biometrics
5 characteristic data for identification and authentication of
6 said individual,

7 said client side comprising:

8 a biometrics information inputting section having a

9 function to acquire biometrics information;

10 a biometrics characteristic data extracting section for

11 extracting biometrics characteristic data, to be needed in a

12 plurality of verification modes, from biometrics information

13 acquired through said biometrics information inputting

14 section; and

15 a verification mode version attaching section for

16 attaching, to registration biometrics characteristic data to

17 be sent from said biometrics characteristic data extracting

18 section to said server side, a verification mode version

19 related to said registration biometrics characteristic data,

20 while said server side comprising:

21 a biometrics characteristic data registering section

22 for previously preserving said registration biometrics

23 characteristic data from said client side together with said

24 verification mode version; and

25 a biometrics characteristic data verifying section made

26 to handle a plurality of verification modes, for verifying that

27 verification biometrics characteristic data on a person

28 forming a subject of verification from said client side matches

29 registration biometrics characteristic data on the same

30 subject person previously preserved in said biometrics

31 characteristic data registering section,

32 wherein said verification mode version attached to said

33 registration biometrics characteristic data is communicated

34 from said server side to said biometrics characteristic data

35 extracting section on said client side, and said biometrics

36 characteristic data extracting section extracts biometrics
37 characteristic data, to be needed in a verification mode
38 corresponding to said verification mode version communicated
39 from said server side, as said verification biometrics
40 characteristic data from biometrics information acquired
41 through said biometrics information inputting section.

1 25. A client-server type personal authentication system in
2 which a client side extracts verification biometrics
3 characteristic data from biometrics information on an
4 individual while a server side verifies biometrics
5 characteristic data for identification and authentication of
6 the individual,

7 said client side comprising:

8 a biometrics information inputting section having a
9 function to acquire biometrics information;

10 a biometrics characteristic data extracting section for
11 extracting biometrics characteristic data from biometrics
12 information acquired through said biometrics information
13 inputting section; and

14 an acquisition condition attaching section for
15 attaching, to registration biometrics characteristic data to
16 be sent from said biometrics characteristic data extracting
17 section to said server side, an acquisition condition related
18 to said registration biometrics characteristic data in said
19 biometrics information inputting section,

20 while said server side comprising:

21 a biometrics characteristic data registering section
22 for previously preserving said registration biometrics
23 characteristic data from said client side together with said
24 acquisition condition; and

25 a biometrics characteristic data verifying section for
26 verifying that verification biometrics characteristic data on
27 a person forming a subject of verification from said client
28 side matches registration biometrics characteristic data on
29 the same subject person previously preserved in said biometrics
30 characteristic data registering section,

31 wherein said acquisition condition attached to said
32 registration biometrics characteristic data is communicated
33 from said server side to said biometrics characteristic data
34 extracting section on said client side, and said biometrics
35 characteristic data extracting section extracts biometrics
36 characteristic data under said acquisition condition
37 communicated from the server side, as said verification
38 biometrics characteristic data from biometrics information
39 acquired through said biometrics information inputting
40 section.